IN THE CLAIMS:

Please enter the attached listing of claims into the application. This listing of claims replaces all prior listing of claims in the application.

LISTING OF CLAIMS

1. (Currently Amended) An isolated nucleic acid molecule selected from the group consisting of:

a) a nucleic acid molecule consisting of a nucleotide sequence which is at least 80% identical to the nucleotide sequence of SEQ ID NO:1~~, 3, 5, 7, 9 or 11~~ and which encodes a polypeptide that dephosphorylates RNA polymerase II or which interacts with REST/NRSF;

b) a nucleic acid molecule comprising a nucleotide sequence which is at least 80% identical to the nucleotide sequence of SEQ ID NO:1 and which encodes a polypeptide that dephosphorylates RNA polymerase II or which interacts with REST/NRSF~~, 3, 5, 7, 9 or 11~~;

c) a nucleic acid molecule which encodes a polypeptide consisting of the amino acid sequence of SEQ ID NO:2~~, 4, 6, 8, 10 or 12~~;

d) a nucleic acid molecule which encodes a polypeptide comprising the amino acid sequence of SEQ ID NO:2~~, 4, 6, 8, 10 or 12~~;

e) a nucleic acid molecule which encodes a polypeptide comprising the amino acid sequence of SEQ ID NO:2~~, 4, 6, 8, 10 or 12~~ with 0 to 50 conservative amino acid substitutions and which encodes a polypeptide that dephosphorylates RNA polymerase II or which interacts with REST/NRSF; and

f) a nucleic acid molecule which encodes a naturally occurring allelic variant of a polypeptide comprising the amino acid sequence of SEQ ID NO:2~~, 4, 6, 8, 10 or 12~~ wherein the nucleic acid molecule hybridizes to a nucleic acid molecule consisting of SEQ ID NO: 1, 3, 5, 7, 9 or 11, or a complement thereof, under stringent conditions of 0.5M Sodium Phosphate, 7% SDS at 65°C, followed by one or more washes at 0.2X SSC, 1% SDS at 65°C and which encodes a polypeptide that dephosphorylates RNA polymerase II or which interacts with REST/NRSF.

2. (Currently Amended) An isolated nucleic acid molecule comprising a sequence selected from the group consisting of: a) ~~the cDNA deposited with ATCC as~~ the GenBank Accession Number BE300370; b) ~~the cDNA deposited with ATCC as~~ the GenBank Accession Number AL520011; and c) ~~the cDNA deposited with ATCC as~~ the GenBank Accession Number AL520463, or a complement thereof, wherein the nucleic acid molecule encodes a polypeptide that dephosphorylates RNA polymerase II or which interacts with REST/NRSF.

3. (Currently Amended) A nucleic acid molecule comprising the nucleotide sequence of SEQ ID NO:1~~, 3, 5 , 7, 9 or 11~~.

4. (Currently Amended) A nucleic acid molecule consisting of the nucleotide sequence of SEQ ID NO:1~~, 3, 5, 7, 9 or 11~~.

5. (Original) The isolated nucleic acid molecule of claim 1, wherein the nucleotide sequence is at least 90% identical to SEQ ID NO:1, 3, 5, 7, 9 or 11.

6. (Original) The isolated nucleic acid molecule of claim 1, wherein the nucleotide sequence is at least 95% identical to SEQ ID NO:1, 3, 5, 7, 9 or 11.

7. (Original) A vector containing the nucleic acid of claim 1, 2, 3 or 4.

8. (Original) A host cell containing the vector of claim 7.

9. (Original) The host cell of claim 8, wherein the host cell is a bacterial, yeast, insect or mammalian cell.

10. (Original) A method of producing a polypeptide, the method comprising culturing the host cell of claim 8 in a culture, expressing the polypeptide encoded by the nucleic acid in the cultured host cell, and isolating the polypeptide from the culture.

11. (Withdrawn) An isolated polypeptide selected from the group consisting of: a) a polypeptide consisting of an amino acid sequence which is at least 80% identical to the amino acid sequence of SEQ ID NO:2, 4, 6, 8, 10 or 12; b) a polypeptide comprising an amino acid sequence which is at least 80% identical to the amino acid sequence of SEQ ID NO:2, 4, 6, 8, 10 or 12; c) a polypeptide comprising the amino acid sequence of SEQ ID NO:2, 4, 6, 8, 10 or 12 with 0 to 50 conservative amino acid substitutions; d) a polypeptide which is encoded by a nucleic acid molecule comprising a nucleotide sequence which is at least 80% identical to a nucleic acid comprising the nucleotide sequence of SEQ ID NO:1, 3, 5, 7, 9 or 11; and e) a naturally occurring allelic variant of a polypeptide comprising the amino acid sequence of SEQ ID NO:2, 4, 6 or 8, wherein the polypeptide is encoded by a nucleic acid molecule which hybridizes to a nucleic acid molecule consisting of SEQ ID NO: 1, 3, 5, 7, 9 or 11, or a complement thereof, under stringent conditions.

12. (Withdrawn) An isolated polypeptide selected from the group consisting of: a) the polypeptide encoded by the cDNA insert deposited with ATCC as Accession Number BE300370; b) the polypeptide encoded by the cDNA insert deposited with ATCC as Accession Number AL520011; and c) the polypeptide encoded by the cDNA insert deposited with ATCC as Accession Number AL520463.

13. (Withdrawn) A polypeptide comprising the amino acid sequence of SEQ ID NO:2, 4 , 6, 8, 10 or 12.

14. (Withdrawn) A polypeptide consisting of the amino acid sequence of SEQ ID NO:2, 4, 6, 8, 10 or 12.

15. (Withdrawn) The isolated polypeptide of claims 11, 12, 13 or 14, wherein the polypeptide is a phosphatase or a phosphatase inactive mutant.

16. (Withdrawn) The isolated polypeptide of claim 15, wherein the phosphatase is a serine phosphatase.

17. (Withdrawn) The isolated polypeptide of claim 16, wherein the serine phosphatase is a small C-terminal domain phosphatase (SCP) that dephosphorylates RNA polymerase II.

18. (Withdrawn) The isolated polypeptide of claim 15, wherein the serine phosphatase dephosphorylates serine 5 within the C-terminal binding domain (CTD) of RNA polymerase II.

19. (Withdrawn) The polypeptide of claim 18, wherein the phosphatase is small CTD phosphatase-1 (SCP1), small CTD phosphatase-2 (SCP2), or small CTD phosphatase-3 (SCP3).

20. (Withdrawn) The isolated polypeptide of claim 11, wherein the amino acid sequence comprises 0 to 30 conservative amino acid substitutions.

21. (Withdrawn) The isolated polypeptide of claim 11, wherein the amino acid sequence comprises 0 to 10 conservative amino acid substitutions.

22. (Withdrawn) The isolated polypeptide of claim 11, wherein the amino acid sequence is at least 90% identical to SEQ ID NO:2, 4, 6, 8, 10 or 12.

23. (Withdrawn) The isolated polypeptide of claim 11, wherein the amino acid sequence is at least 95% identical to SEQ ID NO:2, 4, 6 , 8, 10 or 12.

24. (Withdrawn) An antibody that selectively binds to a polypeptide of claim 11, 12, 13 or 14.

25. (Withdrawn) The antibody of claim 24, wherein the antibody is polyclonal or monoclonal.

26. (Withdrawn) A method of promoting differentiation of a non-neuronal cell in to a cell of the nervous system, the method comprising: a) contacting the cell with a

nucleic acid molecule comprising a nucleic acid sequence encoding a polypeptide selected from the group consisting of SEQ ID NO:10 and SEQ ID NO:12; and b) expressing the polypeptide in the cell.

27. (Withdrawn) The method of claim 26, wherein the non-neuronal-cell is a stem cell.

28. (Withdrawn) The method of claim 26, wherein the stem cell is an embryonic stem cell.

29. (Withdrawn) The method of claim 26, wherein the cell of the nervous system is a neuron, a sensory neuron, a motoneuron, an interneuron, a glial cell, a microglial cell or an astrocyte.

30. (Withdrawn) The method of claim 26, wherein the nucleic acid molecule is an expression vector.

31. (Withdrawn) The method of claim 30, wherein the nucleic acid molecule is a viral genome.

32. (Withdrawn) A method of inhibiting differentiation of a non-neuronal cell in to a cell of the nervous system, the method comprising: a) contacting the cell with a nucleic acid molecule comprising a nucleic acid sequence encoding a polypeptide selected from the group consisting of SEQ ID NO:2. SEQ ID NO:4, SEQ ID NO:6 and SEQ ID NO:8; and b) expressing the polypeptide in the cell.

33. (Withdrawn) A method of promoting RNA polymerase II associated transcription in a cell, the method comprising: a) contacting the cell with a nucleic acid molecule comprising a nucleic acid sequence encoding a polypeptide selected from the group consisting of SEQ ID NO:10 and SEQ ID NO:12; and b) expressing the polypeptide in the cell.

34. (Withdrawn) A composition comprising an inhibitor of small CTD phosphatase (SCP) gene expression, wherein the inhibitor is selected from the group consisting of: a) a small molecule inhibitor of gene expression; b) an anti-sense oligonucleotide; and c) a small interfering RNA molecule (siRNA or RNAi).

35. (Withdrawn) The composition of claim 34, wherein the inhibitor of SCP gene expression specifically binds to a polynucleotide selected from the group consisting of: a) a polynucleotide comprising a sequence selected from the group consisting of SEQ ID NO:1, 3, 5 and 7; b) a complement of a polynucleotide comprising a sequence selected from the group consisting of SEQ ID NO:1, 3, 5 and 7; c) a reverse sequence of a polynucleotide comprising a sequence selected from the group consisting of SEQ ID NO:1, 3, 5 and 7; d) a polynucleotide that encodes a polypeptide comprising a sequence selected from the group consisting of SEQ ID NO:2, 4, 6 and 8; e) a complement of a polynucleotide that encodes a polypeptide comprising a sequence selected from the group consisting of SEQ ID NO:2, 4, 6 and 8; and f) a reverse sequence of a polynucleotide that encodes a polypeptide comprising a sequence selected from the group consisting of: SEQ ID NO:2, 4, 6 and 8.

36. (Withdrawn) The composition of claim 34, wherein the cell is a stem cell.

36. (Withdrawn) A method of promoting the differentiation of a non-neuronal cell in to a cell of the nervous system, the method comprising contacting the non-neuronal cell with the composition of claim 34 in a sufficient concentration to inhibit the expression of a small CTD phosphatase (SCP).

37. (Withdrawn) A method of promoting the differentiation of a non-neuronal cell in to a cell of the nervous system, the method comprising contacting the non-neuronal cell with the antibody of claim 24 in a sufficient concentration to inhibit the activity of a small CTD phosphatase (SCP).

38. (Withdrawn) A method for identifying a compound which modulates the activity of a polypeptide of claim 11, the method comprising: a) contacting a polypeptide of claim 11 with a test compound; and b) determining the effect of the test compound on the activity of the polypeptide to thereby identify a compound which modulates the activity of the polypeptide.

39. (Withdrawn) A method of modulating the differentiation of a mammalian stem cell comprising contacting the stem cell with a compound that modulates SCP1, SCP2 or SCP3 activity, under conditions suitable for differentiation of said stem cell.

40. (Withdrawn) The method of claim 1, wherein the compound inhibits SCP1, SCP2 or SCP3 activity.

41. (Withdrawn) A method of transplanting a mammalian stem cell or progenitor cell to a patient in need thereof, the method comprising: (a) contacting the stem cell or progenitor cell with a compound that inhibits SCP1, SCP2 or SCP3 activity to produce a treated stem cell or progenitor cell; and (b) transplanting the treated stem cell into said patient.

42. (Withdrawn) An in vitro method to modulate the differentiation state of a stem cell, the method comprising: (i) contacting the stem cell with at least one inhibitory RNA molecule (RNAi) comprising a sequence of a gene, or the effective part thereof, selected from the group consisting of SCP1, SCP2 and SCP3; (ii) providing conditions conducive to the growth and differentiation of the cell treated in (i); and optionally (iii) maintaining and/or storing the cell in a differentiated state.